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•	,		2155	
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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)			
	10/006,067	MANDATO ET AL.			
Office Action Summary	Examiner	Art Unit			
	Alicia Baturay	2155			
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply					
A SHORTENED STATUTORY PERIOD FOR REPLY THE MAILING DATE OF THIS COMMUNICATION.  Extensions of time may be available under the provisions of 37 CFR 1.13 after SIX (6) MONTHS from the mailing date of this communication.  If the period for reply specified above is less than thirty (30) days, a reply If NO period for reply specified above, the maximum statutory period w Failure to reply within the set or extended period for reply will, by statute, Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b)	36(a). In no event, however, may a reply be time within the statutory minimum of thirty (30) days will apply and will expire SIX (6) MONTHS from cause the application to become ABANDONE	nely filed s will be considered timely. the mailing date of this communication. D (35 U.S.C. § 133).			
Status		,			
<ol> <li>Responsive to communication(s) filed on 18 May 2005.</li> <li>This action is FINAL. 2b) This action is non-final.</li> <li>Since this application is in condition for allowance except for formal matters, prosecution as to the ments is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.</li> </ol>					
Disposition of Claims					
4)	vn from consideration.				
Application Papers					
9) The specification is objected to by the Examine 10) The drawing(s) filed on 6 December 2001 is/are Applicant may not request that any objection to the Replacement drawing sheet(s) including the correct 11) The oath or declaration is objected to by the Ex	e: a)⊠ accepted or b)⊡ objecte drawing(s) be held in abeyance. See ion is required if the drawing(s) is ob	e 37 CFR 1.85(a). jected to. See 37 CFR 1.121(d).			
Priority under 35 U.S.C. § 119					
<ul> <li>12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).</li> <li>a) All b) Some * c) None of:</li> <li>1. Certified copies of the priority documents have been received.</li> <li>2. Certified copies of the priority documents have been received in Application No. 10/006,067.</li> <li>3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</li> <li>* See the attached detailed Office action for a list of the certified copies not received.</li> </ul>					
Attachment(s)  1) Notice of References Cited (PTO-892)  2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 12062001.	4) Interview Summary Paper No(s)/Mail Da 5) Notice of Informal P 6) Other:	(PTO-413) ate Patent Application (PTO-152)			

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#### **DETAILED ACTION**

1. This Office Action is in response to the amendment filed 18 May 2005.

2. Claims 1-46 were amended.

3. Claims 1-46 are pending in this Office Action.

#### Response to Amendment

- 4. The objection to the claims regarding minor informalities was addressed and is withdrawn.
- 5. The rejection of claims 1-23 under 35 U.S.C. § 101 regarding non-statutory subject matter is maintained.
- 6. The rejection of claims 24-46 under 35 U.S.C. § 101 regarding non-statutory subject matter was addressed and is withdrawn:
- 7. The rejection is respectfully maintained as set forth in the last Office Action mailed on 16 February 2005. Applicant's arguments with respect to claims 1-46 have been fully considered but they are deemed to be most and the old rejection maintained.

### Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 1-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. They recite a processor in the preamble, but the body of the claim remains primarily directed toward software.

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Descriptions and expressions of a computer program not encoded on a computer readable medium do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized (See MPEP 2106.IV.B.1(a)). Therefore claims 1-23 are directed to non-statutory subject matter.

## Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
- 11. Claims 1-17, 20-40, and 43-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Zinky et al. (U.S. 6,480,879).
- 12. With respect to claim 1, Zinky teaches a processor for one or more communication networks including middleware, the processor comprising

An application programming interface (Zinky, col. 9, lines 47-50) configured as a data model describing quality-of-service contracts (Zinky, col. 5, line 66 – col. 6, line 4) and quality-of-service adaptation paths (Zinky, col. 8, lines 48-56) as specified by quality-of-service aware mobile multimedia applications (Zinky, col. 2, lines 61-63) using the

application programming interface, in order to manage quality-of-service and mobility-aware network connections with other applications (Zinky, col. 6, lines 22-30), where a quality-of-service adaptation path defines an adaptation policy identifying quality-of-service specifications and allows quality of service changes (Zinky, col. 6, lines 7-30).

- With respect to claim 2, Zinky teaches the invention described in claim 1, including the processor where the adaptation paths are expressed as hierarchical finite state machines based on quality-of-service contexts (Zinky, col. 6, lines 22-36). The Authoritative Dictionary of IEEE Standards Terms defines a finite state machine as "a computational model consisting of a finite number of states and transitions between those states, possibly with accompanying actions." Zinky teaches a contract that detects a transition condition that results in one of three regions of QoS.
- 14. With respect to claim 3, Zinky teaches the invention described in claim 2, including the processor where a quality-of-service context identifies an arrangement of quality-of-service specifications to be enforced throughout a given set of streams (Zinky, col. 6, lines 7-11).
- 15. With respect to claim 4, Zinky teaches the invention described in claim 2, including the processor where the hierarchical finite state machines comprise controllable states in the context of streams at the lowermost level (Zinky, col. 7, lines 26-36).

- With respect to claim 5, Zinky teaches the invention described in claim 2, including the processor where quality-of-service synchronization is provided so as to ensure that some user's given constraints on quality-of-service are globally enforced throughout a given set of streams (Zinky, col. 3, lines 60-67).
- 17. With respect to claim 6, Zinky teaches the invention described in claim 1, including the processor where the specification of the quality-of-service contracts comprises hysteresis parameters for the transition between quality-of-service states (Zinky, col. 9, lines 51-56).
- 18. With respect to claim 7, Zinky teaches the invention described in claim 1, including where the specification of the quality-of-service contracts comprises utility parameters defining user's perceived utility factors associated with the respective quality-of service contract (Zinky, col. 6, lines 12-21).
- 19. With respect to claim 8, Zinky teaches the invention described in claim 1, including the processor further comprising an application handler unit offering the application programming interface for providing quality-of-service aware mobile multimedia applications with the possibility of managing network connections with other applications (Zinky, col. 5, line 66 col. 6, line 4).
- 20. With respect to claim 9, Zinky teaches the invention described in claim 8, including the processor where the application handler unit registers requests for notification events from

applications and generates such events whenever the corresponding triggering conditions occur (Zinky, col. 7, lines 52-57).

- With respect to claim 10, Zinky teaches the invention described in claim 8, including the processor where the application handler unit operates on the basis of a data model comprising streams, quality-of-service context (Zinky, col. 6, lines 7-11), quality-of-service associations and adaptation paths (Zinky, col. 8, lines 48-56) modeled as hierarchical finite state machines (Zinky, col. 6, lines 22-36).
- 22. With respect to claim 11, Zinky teaches the invention described in claim 10, including the processor where the application handler unit creates for each unidirectional stream an instance of a chain controller for handling data plane and quality-of-service control plane related issues (Zinky, col. 7, lines 6-18).
- 23. With respect to claim 12, Zinky teaches the invention described in claim 11, including the processor where the chain controller compares the quality-of-service requirements of a user with actual values of monitored parameters and configures a chain of multimedia components accordingly (Zinky, col. 7, lines 38-57).
- 24. With respect to claim 13, Zinky teaches the invention described in claim 12, including the processor where the chain controller creates and manages a transport service interface socket,

whereby the multimedia components directly exchange data through the transport service interface socket (Zinky, col. 5, lines 52-65).

- 25. With respect to claim 14, Zinky teaches the invention described in claim 11, including the processor where the chain controller monitors and controls the local resources required to process the given stream by using resource managers (Zinky, col. 9, lines 30-38).
- 26. With respect to claim 15, Zinky teaches the invention described in claim 11, including the processor further comprising a quality-of-service broker for managing overall local resources by managing the whole set of streams via the chain controllers (Zinky, col. 5, lines 23-30).
- 27. With respect to claim 16, Zinky teaches the invention described in claim 15, including the processor where the quality-of-service broker manages system-wide resources via resource controllers (Zinky, col. 9, lines 30-38).
- With respect to claim 17, Zinky teaches the invention described in claim 15, including the processor where the quality-of-service broker controls end-to-end quality-of-service negotiation by using a session manager (Zinky, col. 3, lines 60-67).
- 29. With respect to claim 20, Zinky teaches the invention described in claim 11, including the processor where the application handler unit and the various instances of the chain controller are forming an application handler cluster (Zinky, col. 4, lines 20-31).

- 30. With respect to claim 21, Zinky teaches the invention described in claim 22, including the processor where the application handler cluster and the quality-of-service broker cluster are included in one open distributed processing capsule (Zinky, col. 5, lines 10-18).
- 31. With respect to claim 22, Zinky teaches the invention described in claim 20, including the processor where the application handler cluster and the quality-of-service broker cluster are included in separate open distributed processing capsules (Zinky, col. 5, lines 10-18).
- 32. With respect to claim 23, Zinky teaches the invention described in claim 22, including the processor where the application handler cluster being included in one open distributed processing capsule is installed on a given local node and the quality-of-service broker cluster being included in separate open distributed processing capsule is installed on a separate open distributed processing node, whereby a proxy quality-of-service broker is installed on the given local node (Zinky, col. 5, lines 11-16).
- With respect to claim 24, Zinky teaches a computer program, stored in a tangible storage medium, for managing quality of service, the program representing middleware and comprising executable instructions that cause a computer to:

Configure an application programming interface (Zinky, col. 9, lines 47-50) as a data model describing quality-of-service contracts (Zinky, col. 5, line 66 – col. 6, line 4) and quality-of-service adaptation paths (Zinky, col. 8, lines 48-56) as specified by quality-of-service aware mobile multimedia applications (Zinky, col. 2, lines 61-63) using the

application programming interface, in order to manage quality-of-service and mobility-aware for managing network connections with other applications (Zinky, col. 6, lines 22-30), where a quality-of-service adaptation path defines an adaptation policy identifying quality-of-service specifications and allows quality-of-service changes (Zinky, col. 6, lines 7-30).

- With respect to claim 25, Zinky teaches the invention described in claim 24, including the computer program where the adaptation paths are expressed as hierarchical finite state machines based on quality-of-service contexts (Zinky, col. 6, lines 22-36). The Authoritative Dictionary of IEEE Standards Terms defines a finite state machine as "a computational model consisting of a finite number of states and transitions between those states, possibly with accompanying actions." Zinky teaches a contract that detects a transition condition that results in one of three regions of QoS.
- 35. With respect to claim 26, Zinky teaches the invention described in claim 25, including the computer program where a quality-of-service context identifies an arrangement of quality-of-service specifications to be enforced throughout a given set of streams (Zinky, col. 6, lines 7-11).
- With respect to claim 27, Zinky teaches the invention described in claim 25, including the computer program where the hierarchical finite state machines comprise controllable states in the context of streams at the lowermost level (Zinky, col. 7, lines 26-36).

- With respect to claim 28, Zinky teaches the invention described in claim 25, including the computer program where quality-of-service synchronization is provided so as to ensure that some user's given constraints on quality-of-service are globally enforced throughout a given set of streams (Zinky, col. 3, lines 60-67).
- With respect to claim 29, Zinky teaches the invention described in claim 24, including the computer program where the specification of the quality-of-service contracts comprises hysteresis parameters for the transition between quality-of-service states (Zinky, col. 9, lines 51-56).
- 39. With respect to claim 30, Zinky teaches the invention described in claim 24, including the computer program where the specification of the quality-of-service contracts comprises utility parameters defining user's perceived utility factors associated with the respective quality-of-service contract (Zinky, col. 6, lines 12-21).
- 40. With respect to claim 31, Zinky teaches the invention described in claim 24, including the computer program further characterizing executable instructions that cause a computer to provide an application handler unit to offer the application programming interface for providing quality-of-service aware mobile multimedia applications with the possibility of managing network connections with other applications (Zinky, col. 5, line 66 col. 6, line 4).

- 41. With respect to claim 32, Zinky teaches the invention described in claim 31, including the computer program where the application handler unit registers requests for notification events from applications and generates such events whenever the corresponding triggering conditions occur (Zinky, col. 7, lines 52-57).
- 42. With respect to claim 33, Zinky teaches the invention described in claim 31, including the computer program where the application handler unit operates on the basis of a data model comprising streams, quality-of-service context (Zinky, col. 6, lines 7-11), quality-of-service associations and adaptation paths (Zinky, col. 8, lines 48-56) modeled as hierarchical finite state machines (Zinky, col. 6, lines 22-36).
- 43. With respect to claim 34, Zinky teaches the invention described in claim 33, including the computer program where the application handler unit creates for each unidirectional stream an instance of a chain controller for handling data plane and quality-of-service control plane related issues (Zinky, col. 7, lines 6-18).
- 44. With respect to claim 35, Zinky teaches the invention described in claim 34, including the computer program where the chain controller compares the quality-of-service requirements of a user with actual values of monitored parameters and configures a chain of multimedia components accordingly (Zinky, col. 7, lines 38-57).

- 45. With respect to claim 36, Zinky teaches the invention described in claim 35, including the computer program where the chain controller creates and manages a transport service interface socket, whereby the multimedia components directly exchange data through the transport service interface socket (Zinky, col. 5, lines 52-65).
- 46. With respect to claim 37, Zinky teaches the invention described in claim 34, including the computer program where the chain controller monitors and controls the local resources required to process the given stream by using resource managers (Zinky, col. 9, lines 30-38).
- 47. With respect to claim 38, Zinky teaches the invention described in claim 34, including the computer program further comprising executable instructions that cause a computer to configure a quality-of-service broker for managing overall local resources by managing the whole set of streams via the chain controllers (Zinky, col. 5, lines 23-30).
- 48. With respect to claim 39, Zinky teaches the invention described in claim 38, including the computer program where the quality-of-service broker manages system-wide resources via resource controllers (Zinky, col. 9, lines 30-38).
- 49. With respect to claim 40, Zinky teaches the invention described in claim 38, including the computer program where the quality-of-service broker controls end-to-end quality-of-service negotiation by using a session manager (Zinky, col. 3, lines 60-67).

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With respect to claim 43, Zinky teaches the invention described in claim 34, including the computer program where the application handler unit and the various instances of the chain

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controller are forming an application handler cluster (Zinky, col. 4, lines 20-31).

51. With respect to claim 44, Zinky teaches the invention described in claim 42, including the computer program where the application handler cluster and the quality-of-service broker

cluster are included in one open distributed processing capsule (Zinky, col. 5, lines 10-18).

52. With respect to claim 45, Zinky teaches the invention described in claim 42, including the

computer program where the application handler cluster and the quality-of-service broker

cluster are included in separate open distributed processing capsules (Zinky, col. 5, lines 10-

18).

53. With respect to claim 46, Zinky teaches the invention described in claim 45, including the

computer program where the application handler cluster being included in one open

distributed processing capsule is installed on a given local node and the quality-of-service

broker cluster being included in separate open distributed processing capsule is installed on a

separate open distributed processing node, whereby a proxy quality-of-service broker is

installed on the given local node (Zinky, col. 5, lines 11-16).

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#### Claim Rejections - 35 USC § 103

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54. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the

manner in which the invention was made.

55. Claims 18, 19, 41, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zinky and further in view of Cardei et al. ("Hierarchical Architecture for Real-Time

Adaptive Resource Management").

Zinky teaches the invention substantially as claimed including a system that determines

the quality of service and regulates activity within the distributed system based on the

determined quality of service.

56. With respect to claim 18, Zinky teaches the invention described in claim 15, including a

quality-of-service broker (Zinky, col. 5, lines 23-30).

Zinky does not explicitly teach the ability to download plug-ins.

However, Cardei teaches the processor where the quality-of-service broker includes

further functionality for downloading plug-ins corresponding to a given version of a data

model which can not be handled by the application handler unit (Cardei, page 421, paragraph

5).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify Zinky in view of Cardei in order to enable the ability to download plug-

ins. One would be motivated to do so in order to facilitate the use of a new model by replacing a set of components that interface with the application without rewriting the entire program.

57. With respect to claim 19, Zinky teaches the invention described in claim 18, including a quality-of-service broker (Zinky, col. 5, lines 23-30).

Zinky does not explicitly teach the ability to download plug-ins.

However, Cardei teaches the processor where the quality-of-service broker and the plugins are forming a quality-of-service broker cluster (Cardei, page 421, paragraph 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zinky in view of Cardei in order to enable the ability to download plugins. One would be motivated to do so in order to facilitate the use of a new model by replacing a set of components that interface with the application without rewriting the entire program.

With respect to claim 41, Zinky teaches the invention described in claim 38, including a quality-of-service broker (Zinky, col. 5, lines 23-30).

Zinky does not explicitly teach the ability to download plug-ins.

However, Cardei teaches the computer program where the quality-of-service broker includes further functionality for downloading plug-ins corresponding to a given version of a data model which can not be handled by the application handler unit (Cardei, page 421, paragraph 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zinky in view of Cardei in order to enable the ability to download plugins. One would be motivated to do so in order to facilitate the use of a new model by replacing a set of components that interface with the application without rewriting the entire program.

With respect to claim 42, Zinky teaches the invention described in claim 18, including a quality-of-service broker (Zinky, col. 5, lines 23-30).

Zinky does not explicitly teach the ability to download plug-ins.

However, Cardei teaches the computer program where the quality-of-service broker and the plug-ins are forming a quality-of-service broker cluster (Cardei, page 421, paragraph 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zinky in view of Cardei in order to enable the ability to download plugins. One would be motivated to do so in order to facilitate the use of a new model by replacing a set of components that interface with the application without rewriting the entire program.

# Response to Arguments

- 60. Applicant's arguments filed 3 November 2004 have been fully considered, but they are not persuasive for the reasons set forth below.
- 61. Applicant Argues: Applicant states, "Specifically, Zinky fails to teach or suggest the concept of a QoS adaptation path disclosed in claim 1."

In Response: The examiner respectfully submits that Zinky teaches a quality-of-service adaptation path that defines an adaptation policy (a QuO contract) identifying quality-of-service specifications (the QoS required by a client) and allows quality of service changes (a contract may describe the desired behavior at the time when the system detects a "transition," a condition that causes the contract to change state from one region – levels of QoS – to another. See Zinky, col. 6, lines 7-30). This renders the rejection proper, and thus rejection stands.

62. Applicant Argues: Applicant states, "By contrast, the embodiment of claim 1 suggests the use of a QoS adaptation path that defines an adaptation policy identifying QoS specifications and allows QoS changes. Therefore, the adaptation decisions can be made by the middleware, which has the application requirements, and thus, can negotiate with communication peers to generate adaptation paths. The middleware measures the actual quality of service and solves any QoS problems by deciding which of the possible

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adaptations to perform. Zinky, however, measures QoS parameters and compares them to the QoS regions specified by the application, leaving the adaptation locally to the application."

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In Response: The examiner respectfully submits that in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the adaptation decisions can be made by the middleware) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office

action. Accordingly, THIS ACTION IS MADE FINAL. Applicant is reminded of the

extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from

the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the

mailing date of this final action and the advisory action is not mailed until after the end of the

THREE-MONTH shortened statutory period, then the shortened statutory period will expire on

the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will the statutory

period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Alicia Baturay whose telephone number is (571) 272-3981. The examiner

can normally be reached at 7:30am - 5pm, Monday - Thursday, and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh

Najjar can be reached on (571) 272-4006. The fax phone number for the organization where this

application or proceeding is assigned is (703) 872-9306.

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Alicia Baturay July 26, 2005

PRIMARY EXAMINER